

This Page Is Inserted by IFW Operations  
and is not a part of the Official Record

## **BEST AVAILABLE IMAGES**

Defective images within this document are accurate representations of the original documents submitted by the applicant.

Defects in the images may include (but are not limited to):

- BLACK BORDERS
- TEXT CUT OFF AT TOP, BOTTOM OR SIDES
- FADED TEXT
- ILLEGIBLE TEXT
- SKEWED/SLANTED IMAGES
- COLORED PHOTOS
- BLACK OR VERY BLACK AND WHITE DARK PHOTOS
- GRAY SCALE DOCUMENTS

**IMAGES ARE BEST AVAILABLE COPY.**

**As rescanning documents *will not* correct images,  
please do not report the images to the  
Image Problem Mailbox.**

## WHAT IS CLAIMED IS:

1. A brake fluid pressure maintaining apparatus for a vehicle, comprising:

5 a master cylinder for generating a brake fluid pressure when a driver steps on a brake pedal;

a check valve interposed between the master cylinder and a wheel brake operatable by the brake fluid pressure from the master cylinder for allowing the flow of the brake fluid pressure  
10 from the master cylinder to the wheel brake in a braking operation; and,

a normally-open-type electromagnetic valve closable in order to temporarily maintain the brake fluid pressure of the wheel brake even after removal of the braking operation,

15 wherein the normally-open-type electromagnetic valve includes an electromagnetic coil for generating an electromagnetic force when a current is applied thereto, a fixed core to be immovably disposed, and a movable core to be attracted to the fixed core, and

20 in the brake fluid pressure maintaining state, the normally-open-type electromagnetic valve is closed due to the electromagnetic force to thereby prevent the return of the brake fluid pressure from the wheel brake to the master cylinder and,

in the brake fluid pressure no-maintaining state, the  
25 normally-open-type electromagnetic valve is always opened to

thereby allow the flow of the brake fluid pressure from the master cylinder to the wheel brake or the return of the brake fluid pressure from the wheel brake to the master cylinder, and

5        wherein the normally-open-type electromagnetic valve has the following relief function:

10        by changing the value of the current to be applied to the electromagnetic coil, an attracting force for closing the normally-open-type electromagnetic valve is changed;

by setting the attracting force at a given value, the brake fluid pressure to be maintained on the wheel brake side is set; and,

15        when the normally-open-type electromagnetic valve is closed due to application of a current to the electromagnetic coil, in case where the brake fluid pressure of the wheel brake is higher than the attracting force of the given value, the normally-open-type electromagnetic valve is opened against the attracting  
20        force to thereby reduce the brake fluid pressure of the wheel brake down to the given value.

2. A brake fluid pressure maintaining apparatus for a vehicle as set forth in Claim 1, wherein the normally-open-type  
25        electromagnetic valve is closed and reduces the brake fluid

pressure of the wheel brake down to the given value and, after then, due to decreasing the value of the current to be applied to the electromagnetic coil gradually, reduces the attracting force gradually, thereby reduces the brake fluid pressure of the wheel brake gradually due to the variations in the attracting force.

3. A brake fluid pressure maintaining apparatus for a vehicle as set forth in Claim 2, wherein the normally-open-type electromagnetic valve decrease the attracting force due to gradually reducing the value of the current to be applied to the electromagnetic coil according to a previously set function.

4. A brake fluid pressure maintaining apparatus for a vehicle as set forth in Claim 1, wherein the normally-open-type electromagnetic valve is structured such that a recessed portion having a ring-shaped wall surface is formed in one of the mutually attracting surfaces of the fixed core and movable core, a projecting portion to be inserted into the recessed portion is formed in the other, the projecting portion is disposed so as to face the ring-shaped wall surface and, when the movable core is attracted by the fixed core, the projection portion is inserted into the recessed portion and the ring-shaped wall surface is situated on the outer periphery of the projection portion.

5. A brake fluid pressure maintaining apparatus for a vehicle as set forth in Claim 4, wherein the check valve is a cup-type seal which is disposed on the outer periphery of the normally-open-type electromagnetic valve not only to separate the master cylinder side and wheel brake side from each other but also to allow only the flow of the brake fluid pressure from the master cylinder to the wheel brake but prevent the return of the brake fluid pressure from the wheel brake to the master cylinder.